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Release of CCU software version 2.04

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1. Purpose

This document explains the process of for version management, monitoring & release of CCU, ACU, IOs and Driver Display software for Locomotives.

2. Scope

The scope of the documents is applicable for following activities.

- i. CCU,IOs and DDU software release and status monitoring
- ii. CCU,IOs and DDU Software version management
- iii. CCU,IOs and Display Software Tag management

3. Abbreviations and Definition

CCU:	Central control Unit
DDU:	Driver Display Unit
PGM:	Program file
ACU:	Auxiliary Control Unit
IOs :	Input Output modules

4. Hardware Configurations

The device has to be fulfill following conditions.

Device	Order Nos. / Make
CCU (MCU2)	6FH5155-
DDU	1PA2B00075622
ACUs	M1300/M2000
IOs	LUTZE LION / LEROY

5. Released Software details

Part.	Version to be released: 2.02 Dt:04-Jul-2023	Version to be released: 2.04 Dt:21-Sep-2023
MCU_CCU		
- Operating System	2.05, 10-May-20	2.05 10-May-20
- Hardware module	70.01, 10-May-20	70.01, 10-May-20
- ETH2-Firmware	3.1 4-Dec-20	3.1 4-Dec-20
- Communication Drivers	17.0, 29-Aug-19	17.0, 29-Aug-19
- NSDB	2.80 4-Jul-23	2.80 4-Jul-23
- Program	2.02, 4-Jul-23	2.04 21- Sep -23
- Parameter	0.213, 8-May-23	0.213 8-May-23
DDU		
- Program	1.2.1 – 9K & 1.1.6 – 6K 8-May-23	1.2.2 – 9K & 1.1.7 – 6K 21- Sep -23
- NSDB	2.66 20-Oct-21	2.66 20-Oct-21
ACU		
- Program	2.04, 30-Mar-2023	2.05, 21- Sep -23
- NSDB	1.67	1.67
IO Station		
Lutze IO FW VER 1.05 & 1.2		
- Bus coupler Firmware	1.05/1.22	1.05/1.22
- NSDB	1.00, 0.02, 0.01 and 1 respectively. 10/May/2020	1.00, 0.02, 0.01 and 1 respectively. 10/May/2020
Lutze IO FW VER 2.0		
- Bus coupler Firmware	2	2
- NSDB	1.00 (11,12,21 & 22), 13/Sept/2022	1.00 (11,12,21 & 22), 13/Sept/2022
LEROY IO Ver		
Application	0.21 for IO Station 11 & 21 0.52 for IO Station 12 & 22	0.21 for IO Station 11 & 21 0.52 for IO Station 12 & 22
- NSDB	1.02	1.02

6. Software functions and added features

Annexure I: List of changes carried out for software version 2.04.

7. Buffer

The release includes the below mentioned buffer signals of energy meter- **only for 6K locomotives** which is kept for monitoring on locomotives.

- WAG9_6KBuffer.mon

8. References

- i. Requirement Email by Mr. Pandey, Arvind (RC-IN SMO RS PE) Dt 24.08.2023.
- ii. Requirement Email by Mr. Pandey, Arvind (RC-IN SMO RS PE) Dt 15.08.2023.

9. Appendices

- i. WAG9_CCU_Control Software monitoring

10. Release Scope

This document releases the above mentioned parts for being used for testing in a secured environment and test rides (test rides accompanied by Siemens personnel).

For testing in service in public railway environment the requirements for normal service have to be fulfilled for the entire vehicle. The release for that is not part of this document. This document also does not provide the release for normal commercial service.

For testing in service and normal commercial service the project management has to give a separate release. If all conditions are met, this document may be referenced by the general vehicle release.

11. Author, Functional Coordination

11.1 Author

Ravuri Rama Satya Prakash RC-IN SMO RS EN 5

Sgd. <Author

11.2 Functional Coordination

This document was agreed with:

First and Last Name	Org. code	Review criterion	Date
Amod Dange	RC-IN SMO RS EN 5	Technical	21/Sep/2023

Revision Sheet:

Revision	Date	Section	Description of change
0	27.09.2021	All	1 st Edition
1	20.10.2021	All	2 nd Edition
3	03.02.2022	All	3 rd Edition
3	29.06.2022	All	4 th Edition
4	13.09.2022	All	5 th Edition
5	30.12.2022	All	6 th Edition
6	08.05.2023	All	7 th Edition
7	04.07.2023	All	8 th Edition
8	21.09.2023	All	9 th Edition

Sgd. <Amod Dange

Sgd. <Carsten Baelum

Annexure: I, Ver. 2.04 WAG9-9K-EN2-RLN-10**Changes done in Ver. 2.04:**

1. For 8.1 Harmonic Filter trigger MR Pressure >6.4Kg/cm² is considered.
2. AUX (AUX-1, AUX-2 &AUX-3) Ramp up increased to 7Hz/sec and Ramp down to 5Hz/sec to achieve the AUX ramp up time in 17 Sec's.
3. Changes in logic of Count increment if OCR in locked position feedback is continuously High and electronics is resetted. Count increment will be considered as 1 in that condition. How ever after resetting of OCR relay if trips again with in 60 Sec of VCB closure system will lock the Panto.
4. POP-UP Text Messages as per CLW Document no. 3EHP 541 785.
5. Change in logic for Pantograph lowering in case of any two contactors (52/5, 52/1 & 52/3) are fluttering assuming two or more AU3EHP 541 785.
6. Sequence of AUX contactor closing has been changed from VCB closure NODE 596 to NODE 504.

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